

IMPROVED INSULATED DOOR ASSEMBLY WITH LOW THERMAL DEFLECTION

CROSS-REFERENCE TO RELATED APPLICATIONS

- 5 *6.7* *which*
 This application is a continuation-in-part of U.S. application Serial
 No. 08/922,988 filed September 2, 1997, which is incorporated herein by reference.

now U.S. Patent 5,932,314

TECHNICAL FIELD

- 10 The present invention pertains to insulated door assemblies having
 compression molded skins which exhibit minimal thermal deflection. More
 particularly, the subject invention pertains to insulated door assemblies having skins
 of compression molded, moderately dark colored, fiber- reinforced sheet molding
 compound which exhibit reduced thermal expansion and contraction, which retain
 the ability to receive pigmented stains in a uniform manner, and to improved
 processes for their preparation.

BACKGROUND ART

- 15 Entry door system containing fiber reinforced compression molded
 door skins are becoming increasingly popular. An example of the latter is the
 Classic-Craft™ door available from Therma-Tru Corporation. Such entry door
 systems contain front and back skins which are generally both prepared from fiber
 reinforced sheet molding compound which has been compression molded to provide
 20 a wood grain pattern on the door skin. These door skins are mounted onto stiles and
 rails and contain highly efficient thermal insulation between the skins. Examples of
 such door assemblies may be found in U.S. Patents 4,550,540 and 5,537,789. Such
 door entry systems are much more thermally efficient than solid wood doors or
 insulated metal doors, as well as being more aesthetically pleasing than the latter.

- 25 However, the increased thermal efficiency of such doors is a mixed
 blessing, often being so effective in reducing thermal transmission from the exterior
 to the interior that temperature differentials of 55-60°C may be created between the

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